

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for testing protocols for a network having a plurality of network devices, comprising:
 - a simulation controller configured to transmit network configuration information;
 - one or more nodes, each node being configured to emulate at least one of the plurality of network devices and comprising:
 - a traffic generator configured to generate, in response to the configuration information, traffic during the protocol testing, and
 - an emulator configured to simulate transmission characteristics of the network; and
 - an analysis device configured to monitor the one or more nodes during the protocol testing and analyze the monitoring,

wherein the simulation controller is further configured to:

transmit, prior to the protocol testing, a test scenario to each of the one or more nodes, the test scenario providing configuration information to the one or more nodes,

wherein, when transmitting a test scenario, the simulation controller is further configured to:

transmit information regarding at least one of a terrain, trajectory set, or a traffic control model to the one or more nodes, and

wherein the simulation controller is further configured to:

transfer, prior to transmitting the information, an indication of the terrain, trajectory set, and traffic control model to the analysis device.

2. (original) The system of claim 1 wherein the network is an ad hoc network and each of the plurality of network devices is an ad hoc network device.

3-5. (canceled)

6. (currently amended) The system of claim 1 wherein, when transmitting network configuration information, the simulation controller is configured to:

transfer, prior to the protocol testing, at least one script to each of the one or more nodes, the at least one script controlling functioning of each of the one or more nodes.

7. (currently amended) The system of claim 1 wherein, when transmitting network configuration information, the simulation controller is configured to:

broadcast at least one characteristic matrix to the one or more nodes, the at least one characteristic matrix representing changing network transmission characteristics.

8. (currently amended) The system of claim 1 wherein, when transmitting network configuration information, the simulation controller is configured to:

transmit stimuli to each of the one or more nodes, the stimuli causing the one or more nodes to cease operation, malfunction, begin erroneous transmissions, or start or stop collecting testing information.

9. (original) The system of claim 1 wherein each of the one or more nodes is further configured to:

receive, prior to emulating, software for the protocols and application programs associated with the at least one network device that the respective node is emulating.

10. (original) The system of claim 1 wherein at least one of the one or more nodes is configured to:

emulate two or more of the plurality of network devices.

11. (original) The system of claim 1 wherein the one or more nodes are further configured to:

collect, during the protocol testing, testing information, and
transfer the testing information to the analysis device.

12. (original) The system of claim 1 further comprising:
a testbed network configured to transfer information between the simulation controller, the one or more nodes, and the analysis device.

13. (canceled)

14. (previously presented) A method for testing protocols for a network having a plurality of communication devices, the method comprising:

selecting protocol configuration settings to be tested;

establishing the protocol configuration settings in each of one or more nodes,
each node being configured to emulate at least one of the plurality of communication devices;

simulating operation of the network;

broadcasting, during the simulating, at least one characteristic matrix to the one or more nodes, the at least one characteristic matrix representing changing network transmission characteristics and being determined based on a terrain and a trajectory of the one or more nodes;

monitoring the operation; and

analyzing the monitoring to determine protocol suitability.

15. (original) The method of claim 14 wherein the network is an ad hoc network and each of the plurality of network devices is an ad hoc networking device.

16. (previously presented) The method of claim 14 further comprising:
transmitting, prior to simulating, a test scenario to each of the one or more nodes, the test scenario including at least one of terrain, trajectory set, or traffic control model information.

17. (original) The method of claim 14 further comprising:
receiving, prior to simulating, at least one script at each of the one or more nodes, the at least one script controlling functioning of the one or more nodes.

18. (previously presented) The method of claim 14 further comprising:

receiving, during the simulating, stimuli at the one or more nodes, the stimuli causing the one or more nodes to perform at least one of cease operation, malfunction, begin erroneous transmissions, or start or stop collecting testing information.

19. (canceled)
20. (original) The method of claim 14 wherein the monitoring includes:
collecting, via each of the one or more nodes, simulation information.
21. (original) The method of claim 14 wherein the simulating includes:
simulating transmission of information between the plurality of communication devices according to the protocol configuration settings.
22. (original) The method of claim 21 wherein the monitoring includes:
tracing the transmission.
23. (previously presented) The method of claim 14 wherein the simulating includes:
simulating operation of the network in one of real time or faster than real time.
24. (previously presented) A computer-readable medium containing instructions for controlling at least one processor to perform a method that tests protocols for a network having a plurality of communication devices, the method comprising:
establishing protocol configuration settings in each of a plurality of nodes, each of the nodes being configured to emulate at least one of the plurality of communication devices;

preparing a plurality of channel characteristic matrices to be broadcast to the plurality of nodes, the channel characteristic matrices representing changing network transmission characteristics and being generated based on a terrain and a trajectory of the plurality of nodes;

simulating operation of the network, the simulating including broadcasting the plurality of channel characteristic matrices to the plurality of nodes;

monitoring the operation; and

analyzing the monitoring to determine protocol suitability.

25. (original) The computer-readable medium of claim 24 wherein the network is an ad hoc network and each of the plurality of communication devices is an ad hoc networking device.

26. (original) The computer-readable medium of claim 24 further comprising:
receiving, prior to simulating, a test scenario at each of the nodes, the test scenario including terrain, trajectory set, and traffic control model information.

27. (original) The computer-readable medium of claim 24 further comprising:
receiving, prior to simulating, at least one script at each of the nodes, the at least one script controlling functioning of the nodes.

28. (previously presented) The computer-readable medium of claim 24 further comprising:

receiving, during the simulating, stimuli at the nodes, the stimuli causing the nodes to perform at least one of cease operation, malfunction, begin erroneous transmissions, or start or stop collecting information.

29. (canceled)

30. (original) The computer-readable medium of claim 24 wherein the monitoring includes:

collecting, via each of the nodes, simulation information.

31. (original) The computer-readable medium of claim 24 wherein the simulating includes:

simulating transmission of information between the plurality of communication devices according to the protocol configuration settings.

32. (original) The computer-readable medium of claim 31 wherein the monitoring includes:

tracing the transmission.

33. (previously presented) The computer-readable medium of claim 24 wherein the simulating includes:

simulating operation of the network in one of real time or faster than real time.

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34-38. (canceled)